

09/214198  
JCUS Rec'd PCT/PTO 23 AUG 2001

PATENT

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re application of: TSUYOSHI SANO, ET AL.

Filed: AUGUST 23, 2001

For: INK JET RECORDING, METHOD USING SAME, AND RECORDING

Attorney Docket No.: U013609-7

Assistant Commissioner for Patents  
Washington, D.C. 20231

PRELIMINARY AMENDMENT

Please amend the above application as follows.

IN THE CLAIMS:

Claim 4 (amended) The ink set according to claim 1, ~~is~~ characterized in that difference between ratio between resin weight proportion  $B_2$  and pigment weight proportion  $P_2$  ( $B_2/P_2$ ) in said light ink composition, on one hand, and ratio between resin weight proportion  $B_1$  and pigment weight proportion  $P_1$  ( $B_1/P_1$ ) in said dark ink composition, on other hand, is from 0.01 to 0.5.

CERTIFICATION UNDER 37 C.F.R. 1.10\*  
(Express Mail label number is *mandatory*.)  
(Express Mail certification is *optional*.)

I hereby certify that this correspondence and the documents referred to as attached therein are being deposited with the United States Postal Service on this date August 23, 2001, in an envelope as "Express Mail Post Office to Addressee," Mailing Label Number EL728214739US, addressed to the: Assistant Commissioner for Patents, Washington, D.C. 20231.

BARBARA D. SANTIAGO  
(type or print name of person mailing paper)

Barbara D. Santiago  
Signature of person mailing paper

**WARNING:** Certificate of mailing (first class) or facsimile transmission procedures of 37 C.F.R. 1.8 cannot be used to obtain a date of mailing or transmission for this correspondence.

**\*WARNING:** Each paper or fee filed by "Express Mail" *must* have the number of the "Express Mail" mailing label placed thereon prior to mailing. 37 C.F.R. 1.10(b)  
"Since the filing of correspondence under § 1.10 without the Express Mail mailing label thereon is an oversight that can be avoided by the exercise of reasonable care, requests for waiver of this requirement will not be granted on petition." Notice of Oct. 24, 1996, 60 Fed. Reg. 56,439, at 56,442.

Claim 8 (amended) The ink set according to claim 5, characterized in that ratio between said fine polymer particle weight proportion  $E_1$  and pigment weight proportion  $P_1$  ( $E_1/P_1$ ) in said dark ink composition is 0.05 to 1.0 and ratio between said fine polymer particle weight proportion  $E_2$  and pigment weight proportion  $P_2$  ( $E_2/P_2$ ) in said light ink composition is 0.2 to 4.0.

Claim 9 (amended) The ink set according to claim 1, characterized in that said dark ink composition is a cyan ink composition and/or a magenta ink composition is a light cyan ink composition and/or a light magenta ink composition.

Claim 12 (amended) The ink set according to claim 9, further comprising a yellow ink composition and/or a black ink composition.

Claim 16 (amended) The ink set according to claim 14, characterized in that total quantity of said pigment and said fine polymer particles contained in said water-based pigment inks, respectively, is 0.5 to 45 wt.%.

Claim 17 (amended) The ink set according to claim 14, characterized in that average particle size of said fine polymer particles is 5 to 200 nm.

Claim 18 (amended) The ink set according to claim 14, characterized in that glass transition temperature of said fine polymer particles is -15 to 10°C.

Claim 19 (amended) The ink set according to claim 14, characterized in that each of said water-based pigment inks of six different colors contains dispersant, and a content of this dispersant is 0.1 to 5 st.%.

Claim 21 (amended) The ink set according to claim 14, characterized in that surface tension in each of said water-based pigment inks of six different colors, is 15 to 50 mN/m.

Claim 22 (amended) The ink set according to claim 14, characterized in that said ink set is used in forming text and/or images on special ink jet recording paper.

09914498-11301

Claim 23 (amended) An ink jet recording method for performing printing by discharging liquid drops of an ink composition and causing said ink drops to adhere to a recording medium, characterized in that:

the ink composition of any of the ink sets cited in claim 1 is used as said ink composition.

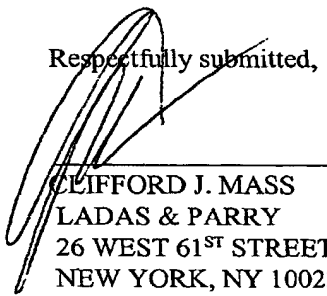
Claim 24 (amended) A recording characterized in that said recording is recorded by an ink jet recording method wherein liquid drops of an ink composition are discharged and those liquid drops are caused to adhere to a recording medium, using the ink set cited in claim 1.

Claim 25 (amended) An ink cartridge characterized in that the ink set cited in claim 1 is integrally accommodated therein.

REMARKS

The above amendatory action is taken solely for the purpose of avoiding claim fees that would otherwise accrue due to the presence of multiple dependent claims.

Respectfully submitted,



CLIFFORD J. MASS  
LADAS & PARRY  
26 WEST 61<sup>ST</sup> STREET  
NEW YORK, NY 10023  
REG. NO: 30,086 (212) 708-1890

**MARKED UP COPY**

4. The ink set according to [any one of] claim[s] 1 [to 3], ~~is~~ characterized in that difference between ratio between resin weight proportion  $B_2$  and pigment weight proportion  $P_2$  ( $B_2/P_2$ ) in said light ink composition, on one hand, and ratio between resin weight proportion  $B_1$  and pigment weight proportion  $P_1$  ( $B_1/P_1$ ) in said dark ink composition, on other hand, is from 0.01 to 0.5.

8. The ink set according to [any one of] claim[s] 5 [to 7], characterized in that ratio between said fine polymer particle weight proportion  $E_1$  and pigment weight proportion  $P_1$  ( $E_1/P_1$ ) in said dark ink composition is 0.05 to 1.0 and ratio between said fine polymer particle weight proportion  $E_2$  and pigment weight proportion  $P_2$  ( $E_2/P_2$ ) in said light ink composition is 0.2 to 4.0.

9. The ink set according to [any one of] claim[s] 1 [to 8], characterized in that said dark ink composition is a cyan ink composition and/or a magenta ink composition is a light cyan ink composition and/or a light magenta ink composition.

12. The ink set according to [any one of] claim[s] 9 [to 11], further comprising a yellow ink composition and/or a black ink composition.

16. The ink set according to claim 14 [or claim 15], characterized in that total quantity of said pigment and said fine polymer particles contained in said water-based pigment inks, respectively, is 0.5 to 45 wt.%.

17. The ink set according to [any one of] claim[s] 14 [to 16], characterized in that average particle size of said fine polymer particles is 5 to 200 nm.

18. The ink set according to [any one of] claim[s] 14 [to 17], characterized in that glass transition temperature of said fine polymer particles is -15 to 10°C.

09914198-11301

09914498.1.1.301

19. The ink set according to any one of claim[s] 14 [to 18], characterized in that each of said water-based pigment inks of six different colors contains dispersant, and a content of this dispersant is 0.1 to 5 st. %.

21. The ink set according to any one of claim[s] 14 [to 20], characterized in that surface tension in each of said water-based pigment inks of six different colors, is 15 to 50 mN/m.

22. The ink set according to claim any one of claim[s] 14 [to 21], characterized in that said ink set is used in forming text and/or images on special ink jet recording paper.

23. An ink jet recording method for performing printing by discharging liquid drops of an ink composition and causing said ink drops to adhere to a recording medium, characterized in that:

the ink composition of any of the ink sets cited in claim[s] 1 [to 22] is used as said ink composition.

24. A recording characterized in that said recording is recorded by an ink jet recording method wherein liquid drops of an ink composition are discharged and those liquid drops are caused to adhere to a recording medium, using the ink set cited in claim[s] 1 [to 22].

25. An ink cartridge characterized in that the ink set cited in [any one of] claim[s] 1 [to 22] is integrally accommodated therein.